

Claims

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1. ~~Handling system for removing wafers (4) provided from a cassette and for transferring the same to a vacuum chamber (6) for heat treatment of the wafer (4), with an external and an internal handling device (2, 9), wherein the internal handling device (9) has at least one fork (10) that can be moved with several degrees of freedom and that interacts with grippers (13) of the external handling device (2), **characterized in that** the wafers (4) that are transported into the vacuum chamber (6) by the external handling device (2) can be placed on a cooling plate (7) of a holding device consisting of the cooling plate (7) and a heating plate (8), wherein the fork (10) of the internal handling device (9) can be moved between the heating plate (8) and the cooling plate (7) and interacts with the holding device for the wafers (4), and in that the internal handling device (9) is accommodated in a cooled area of the vacuum chamber (6).~~
2. Handling system in accordance with claim 1, **characterized in that** the fork (10) can be moved under the placement location of the wafer (4) on the holding device.
3. Handling system in accordance with claim 1, **characterized in that** the cooling plate (7) and the heating plate (8) are arranged next to one another.

4. Handling system in accordance with claim 1, **characterized in that** the cooling plate (7) and the heating plate (8) are arranged one behind the other.
5. Handling system in accordance with claim 1, **characterized in that** the internal handling device (9) is associated with a cooling device for temperature control.
6. Handling system in accordance with one of claims 1 through 5, **characterized in that** instead of the use of two adjacent plates (7), a multiple arrangement is provided in that multiple cooling and heating plates (7, 8) are arranged in a stack.
7. Handling system in accordance with claim 1, **characterized in that** the multiple arrangement can consist of 12 or 24 layers in a stack.
8. Handling system in accordance with claim 7, **characterized in that** the layers can be loaded sequentially or simultaneously (e.g. at one time).
9. Handling system in accordance with claims 1 ad 2, **characterized in that** the fork (10) can be preheated.
10. Handling system in accordance with claim 9, **characterized in that** the fork (10) is in contact with the heating plate (7) for a long enough time that a predetermined temperature is reached before removal of a wafer (4).

11. Handling system in accordance with one of claims 1 to 10, **characterized in that** an additional handling device is installed opposite the internal handling device (9).
12. Handling system in accordance with one of claims 1 to 11, **characterized in that** multiple vacuum chambers (6) are stacked on top of one another and/or next to one another.
13. Handling system in accordance with one of claims 1 to 12, **characterized in that** an option for removal of the product (wafer) is provided through the rear wall (14) of the vacuum chamber (6).
14. Handling system in accordance with claim 13, **characterized in that** the rear wall (14) of the vacuum chamber (6) is equipped with a closable opening that is associated with a second external handling device or another transport system.
15. Handling system in accordance with one of claims 1 to 14, **characterized in that** the vacuum chamber (6) and the transfer area of the cassette are surrounded by a common covering (3) to achieve a dust-free area.
16. Handling system in accordance with claim 15, **characterized in that** the area within the covering (3) is purged with hydrogen/nitrogen at low overpressure.